

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
10 February 2005 (10.02.2005)

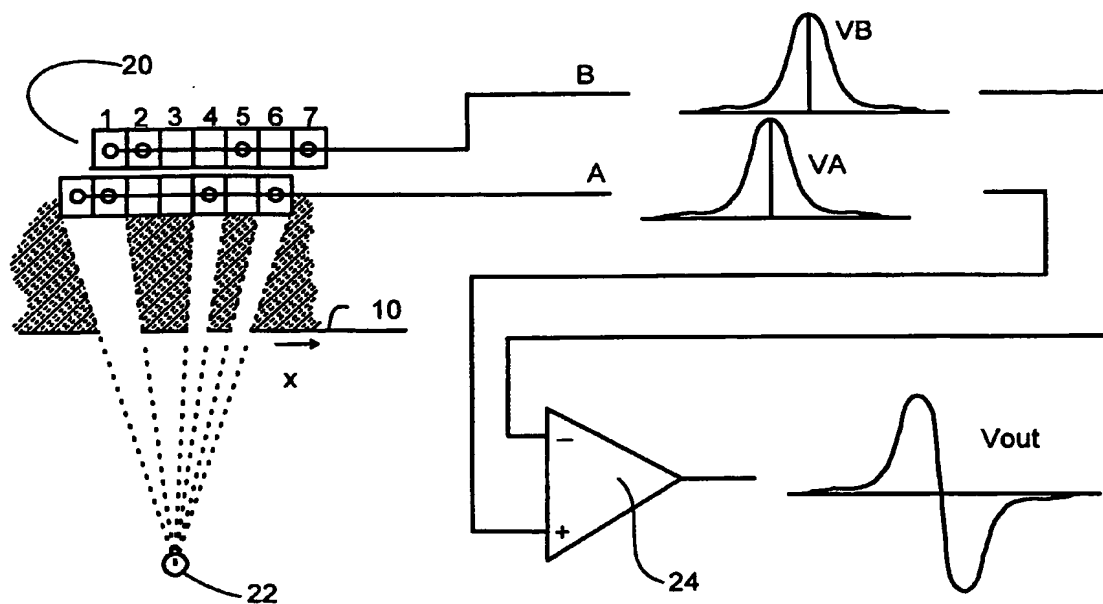
PCT

(10) International Publication Number  
**WO 2005/012841 A1**

- (51) International Patent Classification<sup>7</sup>: **G01D 5/245**
- (21) International Application Number:  
PCT/GB2004/003122
- (22) International Filing Date: 19 July 2004 (19.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
0316921.6 19 July 2003 (19.07.2003) GB
- (71) Applicant (for all designated States except US): **RENISHAW PLC** [GB/GB]; New Mills, Wotton-under-Edge, Gloucestershire GL12 8JR (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **GORDON-INGRAM, Iain, Robert** [GB/GB]; Ringswell, Marshfield, Chippenham, Wiltshire, SN14 8NX (GB).
- (74) Agents: **JACKSON, John, Timothy et al.**; Renishaw PLC, Patent Dept., New Mills, Wotton-Under-Edge, Gloucestershire GL12 8JR (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Declaration under Rule 4.17:**  
— of inventorship (Rule 4.17(iv)) for US only
- Published:**  
— with international search report

[Continued on next page]

(54) Title: **READER FOR A SCALE MARKING**



(57) Abstract: The invention relates to a reference mark detector for use with a metrological scale or encoder (10) having a patterned reference mark movable relative to the reference mark detector. The detector may comprise a photodetector array (20) for detecting the patterned reference mark, the array comprising at least two sets of detector elements A and B each set being formed as a pattern which relates to the pattern of the reference mark. The two sets may be separate rows of photodetectors or different elements of the same row of photodetectors. The pattern is preferably irregular.



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*